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(74) Agent: OGASAWARA, Shiro; Daisan-Longev' Bldg., 3-11, Enokicho, Suita-shi, Osaka 5640053 (JP).

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(71) Applicant (for all designated States except US): MAT-SUSHITA ELECTRIC INDUSTRIAL CO., LTD. [JP/JP]; 1006, Oaza Kadoma, Kadoma-shi, Osaka, 5718501 (JP).

(72) Inventors; and

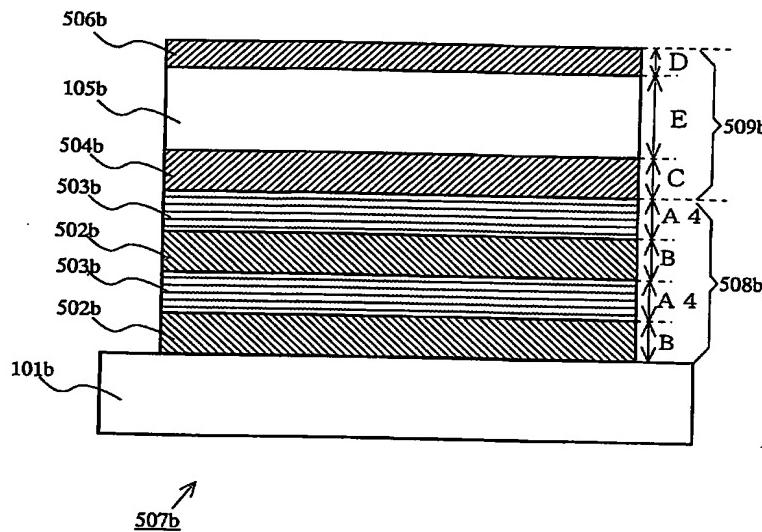
(75) Inventors/Applicants (for US only): IWASAKI, Tomohiro. NAKATSUKA, Hiroshi. ONISHI, Keiji. NAKAMURA, Hiroyuki.

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(54) Title: ACOUSTIC MIRROR TYPE THIN FILM BULK ACOUSTIC RESONATOR, AND FILTER, DUPLEXER AND COMMUNICATION APPARATUS COMPRISING THE SAME



(57) Abstract: A thin film bulk acoustic resonator (507b) comprises a substrate (101b), an acoustic mirror layer (508b) provided on the substrate (101b), including a plurality of impedance layers (502b, 503b) alternately having a high acoustic impedance and a low acoustic impedance, and a piezoelectric thin film vibrator (509b) provided on the acoustic mirror layer (508b), including a lower electrode (504b), a piezoelectric thin film (105b) and an upper electrode (506b). The sum of a thickness of the lower electrode (504b) and a thickness of the upper electrode (506b) is 5% or more and 60% or less of a whole thickness of the piezoelectric thin film vibrator (509b), and the thickness of the lower electrode (504b) is larger than the thickness of the upper electrode (506b).



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